

IN THE CLAIMS

Please amend the claims as follows:

1. (Currently Amended) A drug delivery system, comprising:

an implantable medical device ~~having a current source for transmitting potential signals modulated with digitally encoded command information to an external drug delivery device~~ that includes two electrodes adapted for disposition at an internal body location in contact with body fluids, a current source for injecting current between the two electrodes, an oscillator for driving the current source, and circuitry for modulating the waveform produced by the oscillator to produce potential signals encoded with command information that can be sensed at a skin surface location; and,

an external drug delivery device for affixation to a patient having incorporated therein a data communications interface for demodulating potential signals sensed at a skin surface location, circuitry for deriving command information from the demodulated potential signals, and circuitry for controlling delivery of a drug in accordance with the command information.

2. (Original) The system of claim 1, wherein the potential signals are transmitted in the form of a carrier waveform digitally modulated with the digitally encoded command information by varying the amplitude of the carrier waveform.

3. (Original) The system of claim 1, wherein the potential signals are transmitted in the form of a carrier waveform digitally modulated with the digitally encoded command information by varying the frequency of the carrier waveform.

4. (Original) The system of claim 1, wherein the potential signals are transmitted in the form of a digital pulse train modulated with the digitally encoded information by varying the frequency of the pulses and amplitude modulating a carrier waveform with the modulated pulse train.

5. (Original) The system of claim 1, wherein the potential signals are transmitted in the form of a digital pulse train modulated with the digitally encoded information by varying the width of the pulses and amplitude modulating a carrier waveform with the modulated pulse train.

6. (Original) The system of claim 1, wherein the potential signals are transmitted in the form of a digital pulse train modulated with the digitally encoded information by varying the position of the pulses and amplitude modulating a carrier waveform with the modulated pulse train.

7. (Original) The system of claim 1, wherein the implantable medical device is a cardiac device comprising a sensing channel for sensing electrical activity occurring in a patient's heart and generating sensing signals in accordance therewith, circuitry for extracting information from the sensing signals, and circuitry for detecting a particular medical condition from the extracted information and generating a command signal to the external drug delivery device if the medical condition is present.

8. (Currently Amended) The system of claim 1, wherein the implantable medical device further comprises circuitry for performing an impedance measurement related to a physiological variable by ~~injecting current between two electrodes from a constant current source and further wherein the constant current source is used for transmitting potential signals modulated with~~ digitally encoded command information to the external drug delivery device sensing the voltage between the two electrodes as current is injected from the current source.

9. (Original) The system of claim 1, wherein the drug delivery device is an electrically modulated transdermal injector comprising:

a first electrode connected to a first drug reservoir for containing a drug and contacting a patient's skin;

a second electrode for contacting a patient's skin; and,

a controllable power source for connecting to the electrodes and imposing a voltage therebetween.

10. (Original) The system of claim 7, wherein the cardiac device sends a command signal upon detection of a cardiac arrhythmia.